

CLEAN COPY

OF PAGE 18

OF THE SPECIFICATION

WITH THE CHANGES INCORPORATED

repeater unit amplifies outgoing and incoming transmissions, and is in communication with an outside computer.

As shown in Figure 5, implant (10), in-body digital device (160), out-of-body digital device (170), and communications device (180) communicate with implant (10) and with the world wide web (150), preferably by posting to a web page (not shown). This might be referred to as a "nested loop". In another embodiment, in-body digital device (160), out-of-body digital device (170), and communications device (180) all communicate with each other as well (not shown). These communications can encompass information received from the sensors (not shown) associated with the implant (10), as well as commands given to the actuator (not shown) of the implant (10).

F. Drugs and Drug Releasing Means

Any natural or synthetic, organic or inorganic molecule or mixture thereof can be delivered. In one embodiment, the implant is used to deliver drugs systemically to a patient in need thereof. In another embodiment, the construction and placement of the implant in a patient enables the localized release of drugs that may be too potent for systemic delivery. As used herein, drugs are organic or inorganic molecules, including proteins, nucleic acids, polysaccharides and synthetic organic molecules, having a bioactive effect, for example, anaesthetics, vaccines, chemotherapeutic agents, hormones, metabolites, sugars, immunomodulators, antioxidants, ion channel regulators, and antibiotics. The drugs can be in the form of a single drug or drug mixtures and can include pharmaceutically acceptable carriers. In another embodiment, molecules are released in vitro in any system where the controlled release of a small (milligram to nanogram) amount of one or more molecules is required, for example, in the fields of analytic chemistry or medical diagnostics. Molecules can be effective as pH buffering agents, diagnostic agents, and reagents.

U.S. Patent No. 5,797,898 to Santini, et al., describes implants for delivery of a wide variety of molecules. Implant or implants are miniaturized devices constructed using methods commonly applied to the manufacture of

5

10

15

20

25

30